

Name: _____

Teacher: _____

Algebra Pd: _____

**3.10: Exponential
Growth and Decay**
Classwork

Day Month Year

1. The population of people on Timber Island is currently 3,256 and is decreasing by an annual rate of 3.2%. How many people will be living on Timber Island in 2027?

a. Write the GENERAL equation for exponential decay.

b. What is the initial amount of people?

c. What is the decay factor as a decimal?

d. How many time periods pass by?

e. Use the the exponential decay formula and your answers from b, c, and d to calculate the number of people living on Timber Island in 2027.

2. The half-life of a certain compound is 12 days. If there are 2,345 grams of the compound now, how many grams will be present in 144 days?

a. Write the GENERAL equation for exponential decay.

b. What is the initial amount of the compound?

c. What is the the decay factor?

d. How many half-lives are in 144 days?

e. Use the the exponential decay formula and your answers from b, c, and d to calculate your answer.

5. The Situation: The number of bacteria in a lab is increasing by a growth factor of three each hour. If there are currently 8 milliliters of a certain bacteria, how will you determine the number of milliliters of bacteria present after six hours?

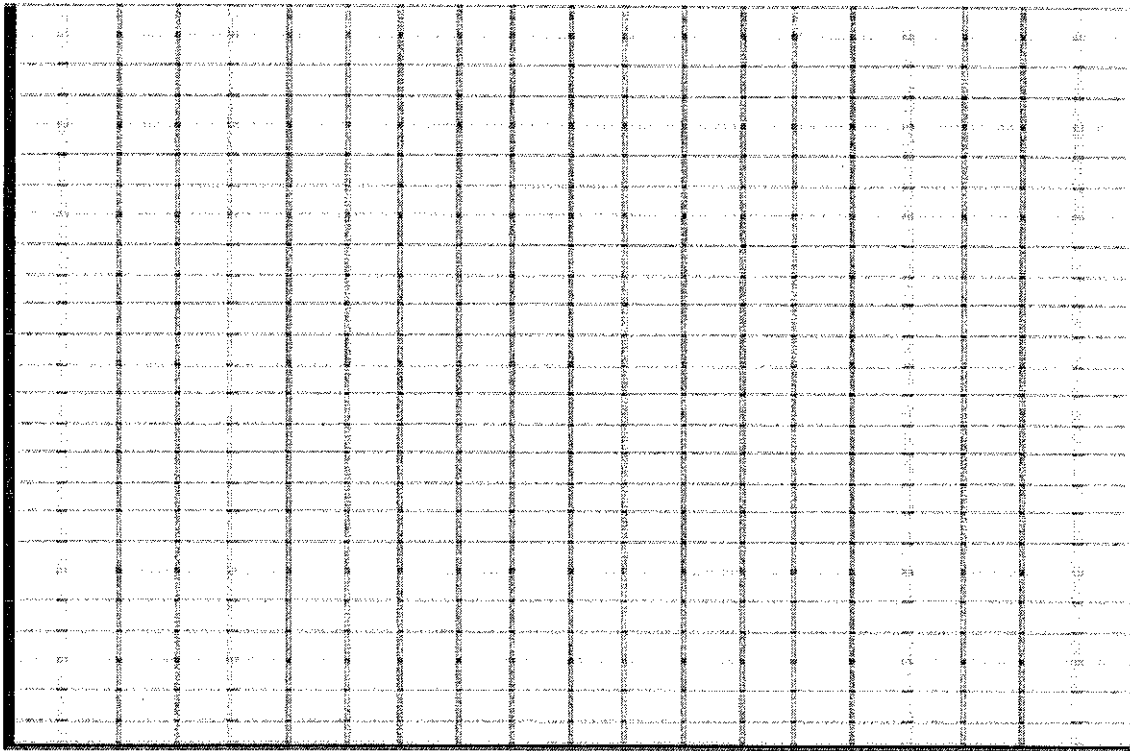
a. Write the general exponential growth formula.

b. Write the equation for THIS situation.

c. Fill in the table of values for the function. USE YOUR EQUATION.

x	0	2	4	6
y				

d. Graph the function. Label your axes.



e. How many milliliters of bacteria will be present after six hours? _____